

Patent claims:

1. An internally cooled strand-guiding roll,  
5 preferably for a continuous casting installation,  
having a central rotatable shaft (1) and at least one  
roll shell (4) which is supported fixed against  
rotation on this shaft, characterized in that the roll  
shell (4) has coolant passages (22, 22a, 22b, 22c)  
10 passing through it, and the coolant passages are  
arranged in the roll shell at a constant distance from  
the cylindrical roll shell outer surface (4a) of the  
roll shell.
- 15 2. The strand-guiding roll as claimed in claim 1,  
characterized in that the coolant passages (22, 22a,  
22b, 22c) in the roll shell (4) are oriented parallel  
to the axis of rotation (25) of the strand-guiding  
roll.
- 20 3. The strand-guiding roll as claimed in claim 1,  
characterized in that the coolant passages (22, 22a,  
22b, 22c) in the roll shell are arranged helically  
around the axis of rotation (25) of the strand-guiding  
25 roll.
4. The strand-guiding roll as claimed in one of  
claims 1 to 3, characterized in that the roll shell (4)  
comprises two annular sleeves (31, 32) which are  
30 rotationally fixedly connected to one another, and the  
coolant passages (22, 22a, 22b, 22c), at the connecting  
lateral surfaces (31a, 32a) of the two annular sleeves,  
are machined into at least one of these connecting  
lateral surfaces.
- 35 5. The strand-guiding roll as claimed in one of  
claims 1 to 3, characterized in that the roll shell (4)  
comprises at least one outer sleeve (34), which forms  
the roll shell outer surface (4a), annular side parts

(35, 36) and a displacement body (37), and this displacement body is inserted in a cavity in the roll shell extending between the annular side parts, the displacement body, together with the inner wall (4b) of the outer sleeve (34), forming coolant passages (22) for a coolant to pass through.

6. The strand-guiding roll as claimed in one of the preceding claims, characterized in that the distance between the coolant passages (22, 22a, 22b, 22c) and the roll shell outer surface (4a) is between 10 mm and 40 mm.

7. The strand-guiding roll as claimed in one of the preceding claims, characterized in that at least one water guide ring (5) is arranged between the roll shell (4) and the central shaft (1).

8. The strand-guiding roll as claimed in claim 7, characterized in that the water guide ring (5) is arranged in the end regions of the longitudinal extent of the roll shell (4), between the roll shell (4) and the central shaft (1).

9. The strand-guiding roll as claimed in one of the preceding claims, characterized in that the coolant passages (22) in the roll shell (4) are connected, via substantially radial branch lines (16, 18, 20, 30), to a coolant line (15), which is arranged in the central shaft (1), for supplying and discharging a coolant, and the substantially radial branch lines are preferably routed through the water guide rings (5).

10. The strand-guiding roll as claimed in claim 9, characterized in that the radial branch lines (16, 18, 20), within the longitudinal extent of the water guide rings (5), open out into at least one distributor annular groove (17, 19) of the water guide ring.

11. The strand-guiding roll as claimed in claim 9 or 10, characterized in that the branch lines (20, 30) in the roll shell (4) are formed by substantially half-moon-shaped milled-out portions (21).

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12. The strand-guiding roll as claimed in one of the preceding claims, characterized in that a plurality of, preferably three, coolant passages (22a, 22b, 22c) arranged parallel next to one another in the roll shell (4) are connected to form one continuous coolant passage (22), and connecting passages (26, 27) between adjacent coolant passages are preferably formed by end-side milled-in formations in the roll shell.

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13. The strand-guiding roll as claimed in one of the preceding claims, characterized in that sealing elements (29), preferably sealing rings inserted into annular grooves, are arranged between water guide rings (5) and roll shell (4) and between water guide rings (5) and the central shaft (1).

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14. The strand-guiding roll as claimed in one of the preceding claims, characterized in that the roll shell (4) is supported directly on the central shaft (1) at least over a subregion of its longitudinal extent.

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15. The strand-guiding roll as claimed in one of the preceding claims, characterized in that the roll shell (4) is fixed against rotation with respect to the shaft (1) by at least one rotation preventer (6), preferably a feather key (7).

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16. The strand-guiding roll as claimed in one of the preceding claims, characterized in that the coolant line (15) for supplying coolant, which is routed in the central shaft (1), starts from one end side of the central shaft, and the coolant line for discharging coolant, which is arranged in the central shaft, opens out at the opposite end side of the central shaft, and

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each coolant line is assigned a rotary leadthrough (10, 12).

17. The strand-guiding roll as claimed in one of  
5 claims 1 to 15, characterized in that the coolant lines  
which are routed in the central shaft open out in one  
end side of the central shaft, and these coolant lines  
are assigned a multi-start rotary leadthrough.